

REMARKS

1. The Amendments and the Support Therefor

Two claims (5 and 7) have been canceled, fifteen new claims (23-37) have been added, and claims 1, 9, 10, and 21 have been amended to leave claims 1-6, 8-13, and 16-25 in the application. Payment for any newly-submitted claims in excess of the amount previously paid for should accompany this Response, as per 37 CFR §1.16(b)-(d), with the fee due being calculated as follows:

FEE CALCULATION

| For | Already Paid | No. Extra | Rate (SMALL ENTITY) | Fee (SMALL ENTITY) |
|--------------------|--------------|-----------|---------------------|--------------------|
| Total Claims | 33 - 20 = | 13 | x \$26 = | \$338 |
| Independent Claims | 4 - 4 = | 0 | x \$110 = | \$0 |
| Total: | | | | \$338 |

No new matter has been added by the amendments or new claims, wherein:

- ***Independent claim 1*** finds support in (for example) claim 7 (as well as 5 and 8), page 2 lines 1-5, and page 4 lines 8-13.
- ***Claim 8*** finds support at (for example) page 3 lines 24-25, page 7 lines 5-10, and page 8 lines 7-8.
- ***Independent claim 9*** finds support in (for example) claims 1 and 7 (as well as 5 and 8), page 2 lines 1-5, page 3 lines 24-25, page 4 lines 8-13, page 7 lines 5-10, and page 8 lines 7-8.
- ***Independent claim 10*** finds support in (for example) claim 7 (as well as 5 and 8), page 2 lines 1-5, and page 4 lines 8-13.
- ***Claim 16*** finds support at (for example) page 10 lines 31-32 and page 12 lines 10-23.
- ***Independent claim 21*** finds support in (for example) claims 1 and 7 (as well as 5 and 8), page 2 lines 1-5, page 3 lines 24-25, page 4 lines 8-13, page 7 lines 5-10, and page 8 lines 7-8.
- ***New claims 23, 28, and 33*** find support at (for example) page 4 lines 10-13.
- ***New claims 24, 29, and 34*** find support at (for example) page 4 lines 3-4.
- ***New claims 25, 30, and 35*** find support at (for example) FIG. 2.
- ***New claims 26, 31, and 36*** find support at (for example) page 7 line 31, page 8 line 9, and page 10 lines 5-7.
- ***New claims 27, 32, and 37*** find support at (for example) page 7 lines 14-16.

Further comments regarding the new claims are set out at Section 9 below.

2. Information Disclosure Statement (Form PTO-1449)

Please note that a supplementary Information Disclosure Statement (IDS) is filed simultaneously with this Response, along with the appropriate fee under 37 CFR §1.17(p) (\$180).

3. Sections 1-2 of the Office Action: Rejection of Claims 1 and 2 under 35 USC §102 in view of U.S. Patent 7,185,816 to Shoobridge

Kindly reconsider and withdraw these rejections. *Shoobridge* describes a two-dimensional barcode having color as a “third dimension,” and there is no suggestion that the *Shoobridge* barcode also vary in its height dimension. Further, an ordinary artisan would not contemplate such a modification because this feature is not known in the art, and it is in any event unclear how one would be able to attain this feature in *Shoobridge*’s printed barcode even if this feature was desired.

4. Section 3 of the Office Action: Rejection of Claims 1, 2, 8, 9, 21, and 22 under 35 USC §102 in view of U.S. Publ’n. 2004/0245343 to Depta

Independent claims 1, 9, and 21 now specify the use of coding units / elements smaller than one micrometer in at least one direction. Paragraphs [0015]-[0018] describe how *Depta* is able to attain fine detail by use of intaglio printing to generate its codes (see also Abstract, paragraph [0008], and [0034] onward.) Intaglio printing is not known to be capable of producing features as fine as those claimed, and an ordinary artisan could not attain the invention, and would not have any reasonable expectation of attaining the invention, by use of intaglio printing. To illustrate, note that paragraph [0017] cites WO00/20216 as disclosing how *Depta* attains its intaglio printing. Looking to an English-language equivalent of WO00/20216, such as Canadian Patent CA2345748 (with copies of these references being provided with the accompanying Information Disclosure Statement), it is seen at page 5 lines 4-23 that the engraved depth of the ink-holding area of the intaglio printing plate is preferably in the range of 5µm to 150µm, and the flank angle is in the range of 30° to 50° (the flank angle being discussed at page 4 line 30 onward). The size of any element printed by the plate

is therefore 5µm to 150µm, in contrast to the submicron size recited in these claims. Since *Depta's* intaglio printing cannot generate the submicron size recited in independent claims 1, 9, and 21, and there is no known way to modify *Depta's* intaglio printing to attain the claimed feature size, independent claims 1, 9, and 21 (and all dependent claims) are not anticipated in view of *Depta*, nor would they be obvious in view of any foreseeable modification of *Depta*.

5. Sections 3-4 of the Office Action: Rejection of Claims 3-13 and 16-22 under 35 USC §103(a) in view of U.S. Patent 7,185,816 to Shoobridge

Claims 3-4, 11-13, and 22 are submitted to be allowable for at least the same reasons as their parent claims.

Regarding the rejections of claim 6, while the Office Action states that it is known in the art to have micron-order barcode dimensions (e.g., in pdf-417), this is not the applicant's understanding, and no references are cited in support of this assertion. Kindly provide evidence to support the rejection if it is maintained.

Regarding the rejection of claim 8, the issue noted by the Examiner has been addressed, and claim 8 is submitted to be unobvious in view of *Shoobridge*. Independent claim 9 is submitted to be allowable for at least the same reasons. Further, in view of the amendment to claim 9 to recite a height axis, claim 9 is also allowable for the reasons noted in the foregoing Section 3 of this Response. Independent claim 9 is also submitted to be allowable for the same reasons as independent claim 10 (discussed immediately below).

Regarding independent claim 10, *Shoobridge* does not describe coding units having sub-micrometer dimensions, and no ordinary artisan would contemplate successful modification of *Shoobridge* to attain such dimensions (similar to the discussion at Section 4 above), nor would one expect that a barcode of such dimensions would be successfully read (since *Shoobridge* is intended for use with conventional packaging barcodes).

Claim 16 is discussed in Section 6 of this Response (below).

Regarding claims 17-20, these do not recite an intended use of the device; rather, they further recite the form that the device takes. Thus, the recited forms must be considered when adjudging

the allowability of these claims.

Independent claim 21 is submitted to be allowable for at least the same reason as claim 10, discussed above. Additionally, *Shoobridge* does not in fact discuss barcodes that protrude from the surface of the article, nor would one contemplate them protruding from the surface of the article, particularly since *Shoobridge* is addressed to conventional packaging barcodes.

6. Section 5 of the Office Action: Rejection of Claim 16 under 35 USC §103(a) in view of U.S. Patent 7,185,816 to Shoobridge and EP000561334A2 to Chen

The rejection of claim 16 is obviated because neither *Shoobridge* nor *Chen* disclose, nor would any ordinary artisan contemplate, the use of an atomic force microscope as a reading device.

7. Section 6 of the Office Action: Rejection of Claims 3, 5-13, and 16-20 under 35 USC §103(a) in view of U.S. Publ'n. 2004/0245343 to Depta

The discussion at Section 5 of this Response applies here as well.

8. Section 7 of the Office Action: Rejection of Claims 3-4 under 35 USC §103(a) in view of U.S. Publ'n. 2004/0245343 to Depta and U.S. Patent 7,185,816 to Shoobridge

Claims 3-4 are submitted to be novel and unobvious for at least the reasons discussed at Sections 3 and 4 of this Response. It is also noted that an ordinary artisan would not contemplate the use of *Depta's* intaglio printing process in *Shoobridge* since *Depta's* intaglio printing process would be exceedingly expensive to implement for *Shoobridge's* codes, which are intended for mass-produced consumer items.

9. New Claims 23-37

New claims 23, 28, and 33 are submitted to be allowable for at least the same reasons as their parent claims.

New claims 24, 29, and 34 are submitted to be allowable for at least the same reasons as their parent claims, and also because the art of record discloses and contemplates the use of printing inks rather than the recited matter.

New claims 25, 30, and 35 are submitted to be allowable for at least the same reasons as their parent claims, and also because the recited features are not disclosed by the cited art, nor would an ordinary artisan contemplate the recited features in view of the cited art. The closest reference appears to be *Depta*, but looking to Canadian Patent CA2345748 (an English-language equivalent of WO00/20216), which discloses the intaglio printing method used by *Depta*, page 2 lines 24-30 state that for optimum resolution, a thin separation bar is required to avoid inks of different printer heights running into each other; see also paragraph [0016] of *Depta*. *Depta* therefore teaches against the recited features.

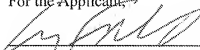
New claims 26, 31, and 36 are submitted to be allowable for at least the same reasons as their parent claims, and also because the recited forming methods are not seen in the cited references.

New claims 27, 32, and 37 are submitted to be allowable for at least the same reasons as their parent claims, and also because the cited references do not disclose or suggest forming a polymer on a semiconductor substrate that does not reflect infra-red.

10. In Closing

If any questions regarding the application arise, please contact the undersigned attorney. Telephone calls related to this application are welcomed and encouraged. The Commissioner is authorized to charge any fees or credit any overpayments relating to this application to deposit account number 18-2055.

For the Applicant,



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